

the existing network to provide number portability, it would have a dramatically smaller impact on the network while being much less expensive to implement.²⁰

c. New Network Management Required

All of the other proposals require extensive changes to the way records of calls and telephone numbers are maintained in the existing PSN. Although these proposals claim to have minimal impact on today's network operation, this is simply not the case. The MCI plan requires a completely new methodology for call routing. Either all calls for a specific central office code will have to be routed through one office or a complicated administrative process will be required to do multiple translations on every call to a number in a ported central office code. The Stratus method requires a complex administrative procedure for Customer Network Addresses and Network Node Addresses. The AT&T approach requires that a detailed administrative function be added to keep track of all the Location Routing Numbers in use. These proposals all require additional network management functions that will become extremely complex as more and more numbers are ported.

d. Cost and Timing Considerations

Finally, GTE is very concerned that the adoption of any other portability proposal may require the largest expenditure for the implementation of a single functionality in the history of telecommunications. For virtually all other

²⁰

GTE's approach is comparable to the present expansion of the 800 database to 888, where no new standards or dramatic changes are required to the existing PSN infrastructure.

portability schemes, significant modifications to the vast majority of existing switches will be required. In addition, new signaling protocols will have to be introduced together with modified operations support systems to process every telephone call. This will no doubt take years to implement at a total cost yet to be determined. For all of these reasons, GTE implores the Commission to seriously consider GTE's proposal which provides for number portability at a fraction of the cost, confusion, disruption and service degradation that the other proposals will generate.

VII. THE COMMISSION'S CENTRAL ROLE IN THIS PROCEEDING MUST BE TO ASSURE THE ADOPTION OF A UNIFORM AND COST-EFFICIENT LNP ARCHITECTURE

As the Commission is aware, LNP is currently being addressed by many state regulatory authorities across the country.²¹ Based upon GTE's direct participation in a number of state inquiries, it appears that the coordination among states needed to avoid the adoption of LNP architectures that differ from state to state is lacking. Thus, GTE feels that it is incumbent upon the Commission to assure that a uniform national plan for LNP is adopted. GTE firmly believes that basic elements required for the efficient implementation of LNP, such as interoperability and uniform industry standards, will be lost without the Commission's central coordination.²²

²¹ NPRM at ¶ 14.

²² Included in Appendix B is a list of attributes that GTE believes should be key to any LNP implementation plan.

This is not to suggest that the states' efforts have been misguided or are unnecessary. To the contrary. The states are now and will continue to be in a position to provide the Commission and the industry with valuable insights and information on LNP obtained through their inquiries. In this way, the states, the industry and the Commission can work in unison toward a uniform approach to LNP. Once the most effective and cost-efficient LNP architecture has been identified, the Commission should establish guidelines for use by the states in formulating implementation timetables appropriate for their jurisdictions. The Commission should also establish a reasonable timetable for the industry to develop the standards necessary to implement the chosen LNP architecture.

In short, the Commission's central role must be to oversee the development of a uniform national LNP model to assure that when LNP is implemented across the country, everyone is working from the same blueprint.²³ To allow otherwise would invite egregious cost inefficiencies and implementation nightmares, severely jeopardizing the nationwide availability of LNP.²⁴

²³ Because of its uniquely central position, the Commission must assume a central coordinating role whether or not "state and federal policies on number portability are likely to diverge or become inconsistent." NPRM at ¶ 32. Even if all policies were consistent, there would still be no guarantee that the same LNP model would be adopted across the country.

²⁴ The resulting problems would be particularly acute for GTE which currently operates in 28 states.

IX. A LONG TERM LNP PLAN MUST EFFICIENTLY ACCOMMODATE THE IMPLEMENTATION OF BOTH SERVICE PROVIDER AND LOCATION PORTABILITY

GTE has examined the network modifications necessary to implement both service provider and location portability, and has concluded that each LNP proposal must be evaluated in terms of its ability to provide both forms of portability.²⁵ Thus, for example, a plan which may appear effective in implementing service provider portability may be seriously deficient in implementing location portability. Such a deficiency should be identified now in order to avoid unanticipated costs, disruptions and delays in the future. In this regard, one of the most prominent features of GTE's LNP solution is that it efficiently allows for both service provider and location portability *at its inception*.

X. PORTABILITY OF 500 AND 900 NUMBERS

a. 500 Numbers

GTE supports the recommendation made by INC that an industry body be chartered to develop a detailed plan for the development of a nationwide PCS N00 database.²⁶ The Commission should oversee the development of the plan and establish a reasonable timeframe for the industry participants to respond with specific proposals. GTE believes that the final plan should include

²⁵ Because the industry is still evaluating the concept of service portability, GTE reserves comment on the role it should play in the Commission's evaluation of the various proposals.

²⁶ As noted earlier, GTE introduced the industry issue on 500 PCS portability as well as co-chairing the INC workshop on 500 PCS portability.

recommendations for ownership and operation of an N00 service management system.

b. 900 Numbers

GTE agrees with the conclusions of Ameritech, BellSouth, Pacific Bell and others that the system designed to route 800 calls cannot be modified “easily and inexpensively” to accommodate 900 numbers.²⁷ Moreover, GTE does not believe that the present demand for 900 services justifies the significant investment required to make 900 numbers portable.²⁸ The reported drop in demand for 900 services²⁹ may be due more to the stigma generally attached to 900 services than to their current prices. Because of some of the services available through 900 numbers (such as adult chat lines and similar x-rated services) and because of the number of customers who have experienced billing problems resulting from 900 calls, a significant number of customers block all 900 dialing capability on their phones. Thus, GTE does not believe that portability will be the panacea for 900 numbers that many would like to believe.

c. GTE’s Proposal For LNP Can More Efficiently Accommodate 500 And 900 Portability Than Stand-Alone Solutions

Should the Commission find that either 500 or 900 number portability (or both) is in the public interest, the GTE non-geographic LNP solution can also

²⁷ See NPRM at ¶ 74.

²⁸ In a recent review of one GTE billing cycle in California, less than eight-tenths of one percent of the subscribers made one or more 900 calls.

²⁹ See NPRM at ¶ 73.

serve as a model for these services. The similarity in network processing would allow a number of functions to be consolidated into the GTE solution at a substantial savings over a stand-alone solution to either service. By sharing a common network architecture, total costs would be reduced.

XI. CONCLUSION

The preliminary results of GTE's LNP survey indicate that local exchange competition will develop with or without LNP. Thus, LNP will only contribute to competition on an incremental basis. As a result, it is crucial that at every step in its analysis the Commission carefully weigh LNP's incremental contribution against the potentially tremendous costs of its implementation. It is only when LNP is fully cost justified that its implementation can be in the public interest.

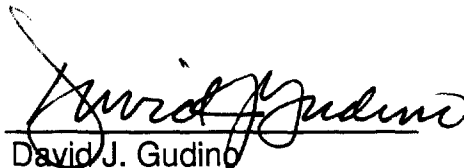
GTE's LNP solution offers the most effective and cost-efficient proposal for number portability. It can provide both service provider portability and location portability on a uniform national basis at its inception at a fraction of the cost of the other proposals. Because GTE's solution does not require major overhauls of existing network components and functions, its system will be easier to modify and expand over time. In contrast, the other LNP models will require modifications over time just in order to realize both service provider and full location portability. Because GTE's solution can be implemented either locally or nationally, it also will provide the Commission with flexibility in working with the states to determine the scale on which LNP initially should be implemented.

GTE urges the Commission to assume the leading role in guiding the industry towards a nationally uniform and cost-efficient LNP architecture. And for all of the reasons discussed above, GTE believes that the Commission should adopt GTE's LNP solution as the model for number portability.

Respectfully submitted,

GTE SERVICE CORPORATION,
on behalf of its affiliated domestic
telephone and wireless operating
companies

By:



David J. Gudino
1850 M Street, N.W.
Suite 1200
Washington, D.C. 20036
(202) 463-5212

September 12, 1995

ITS ATTORNEY

LNP IMPLEMENTATION COST ESTIMATES

The following cost estimates are based upon two different Local Number Portability ("LNP") architectures. The first estimate is based upon an LNP architecture concept similar to that proposed by AT&T that would make all geographic numbers portable. The second estimate is based upon GTE's proposed LNP architecture which uses non-geographic numbers to provide both location and service provider portability. The costs are for upgrading the network strictly to support call routing. The costs resulting from LNP's impact on existing services, such as CLASS, were not included.

I. Cost Estimate For LNP Geographic Number Portability

Assumptions:

1. The estimates reflect the cost to implement geographic number portability *for GTE only*. Also, they do not include the costs for support systems modifications, such as required enhancements to billing mechanisms.
2. The implications of this architecture are an intensive database query requirement, switch capabilities necessary to support this new requirement, and augmentation of the signaling network to support query interactions.
3. The estimates are based upon implementation occurring in 1994. Thus, the state of GTE's network at the end of 1994 was used as the baseline network. GTE's network in 1994 had a total of 3877 switches and all access tandems had ISUP signaling and database query (TCAP) capabilities.
4. A nationwide offering is presumed.
5. 16 million GTE subscribers nationwide.
6. 192 million total subscribers nationwide.
7. During the busy hour, each subscriber makes 1.5 call attempts per hour.
8. End-to-end ISUP signaling.

9. Database queries are performed by both end offices and access tandems.

Cost Components:

1. Switch Capability Upgrades
Estimated cost = \$1.51 billion
2. Database Support
Estimated cost = \$40 million
3. Signaling Network Support
Estimated cost = \$100 million

TOTAL ESTIMATED COST = **\$1.65 BILLION**

II. Cost Estimate For GTE's Proposed LNP Non-Geographic Number Architecture

Assumptions:

1. The estimates reflect the cost to implement non-geographic number portability *for GTE only*. Also, they do not include the costs for support systems modifications such as required enhancements to billing mechanisms.
2. The estimates are based upon implementation occurring in 1994. Thus, the state of GTE's network at the end of 1994 was used as the baseline network. GTE's network in 1994 had a total of 3877 switches and all access tandems had ISUP signaling and database query (TCAP) capabilities.
3. A nationwide offering is presumed.
4. The database queries are performed by access tandems.
5. 25% of GTE customers subscribe to LNP (resulting in approximately four million subscribers).
6. 192 million total subscribers nationwide.

7. During the busy hour, each subscriber makes 1.5 call attempts per hour.

Cost Components:

1. Switch Capability Upgrades

Estimated cost = \$25.4 million

2. Database support

Estimated cost = \$4 million

3. Signaling Network support

Estimated cost = \$4 million

4. Additional Trunks

Estimated cost = \$1.1 million

TOTAL ESTIMATED COST = \$35 MILLION

KEY ATTRIBUTES OF AN LNP NETWORK ARCHITECTURE

- (1) Multiple queries on a single call are unacceptable.
- (2) In addition to SS7 signaling, the preferred solution should allow network transport of other signaling types (*e.g.*, MF signaling).
- (3) The complexity of central office translations for the solution proposed should not be prohibitive in terms of available switching system resources, which include cost, time to install/deploy, administration and overall feasibility of implementation
- (4) The preferred solution should not require the development and deployment of extensive switching system modifications and/or enhancements across a LEC's network (*i.e.*, proposal of an IN vs. AIN solution).
- (5) The functionalities required should draw as much as possible upon existing equipment capabilities, as well as telecommunications and industry standards, while minimizing any changes to same.
- (6) Call set-up time for calls to LNP subscribers must be reasonable and call set-up for calls to non-LNP subscribers should not be affected.